

EFL Improves Social C

By Dr. Patricia Pendry, Photos courtesy

Although equine-facilitated learning (EFL) programs have been credited with improving children's social skills and behavior, scientifically valid research to support these observations is still scarce. That's why a study carried out by Washington State University (WSU) is so exciting. In 2010, WSU's Assistant Professor of Human Development, Dr. Patricia Pendry, the study's principal investigator, received a \$100,000 grant from the National Institutes of Health (NIH) to investigate a relatively new area of NIH research: "human-animal interaction in child health and development." The study used a randomized control trial, considered the most reliable standard for measuring an intervention's impact. It took place at PATH (Palouse Area Therapeutic Horsemanship), a PATH Intl. Premier Accredited Center at WSU in Pullman, WA. In examining the efficacy of an EFL program, PATH to Success, in enhancing the social competence and behavior of fifth- to eighth-grade children, the study found

significant increases in the children's social competence and positive behavior. The study's first-year results will be published in the *Journal of Human Animal Interaction*, a new publication of the American Psychological Association (Pendry & Roeter, 2012).

There is growing evidence that promotion of behavioral and social-emotional competence in children and youth is an effective strategy to prevent mental, emotional and behavioral disorders in adulthood (O'Connell, Boat & Warner, 2009). Yet, identifying and expanding evidence-based prevention programs that promote these competencies is a significant challenge. The main goal of this study was to see if EFL could be an effective approach for prevention programming by targeting normal and at-risk adolescents. Related studies have shown

that participation in equine-assisted activities and



Participants learn how to properly tie halters in a study of the effectiveness of EFL, funded by the National Institutes of Health at Washington State University.

Children's Competence

of Palouse Area Therapeutic Horsemanship

therapies (EAAT) interventions is positively associated with adjustment in various socio-emotional, cognitive and behavioral aspects of functioning. However, there has been a strong call in the field for randomized controlled trials to demonstrate that equine-facilitated interventions are not just associated with these changes but actually cause these positive effects on human development.



Sue Jacobson, program coordinator of People-Pet Partnership at WSU College of Veterinary Medicine, discusses appropriate boundaries with a participant in an EFL study. (The rope touching the ground in this activity, while not ideal, was part of the exercise.)

The PATH to Success

The PATH to Success program, an ongoing EFL program at the PATH center, was the basis for this study. The program was designed and implemented by Sue Jacobson, program coordinator of People-Pet Partnership at the WSU College of Veterinary Medicine, and Dr. Phyllis Erdman, counseling psychologist and associate dean of the WSU College of Education. Its main goal is to enhance child social competence and behavior through 11-week sessions of once-weekly, 90-minute lessons of individual, team and group-focused equine-facilitated activities. The curriculum contains standardized lessons with weekly goals and step-by-step instructions and procedures for each activity, which were piloted for three years before this study was conducted.

Social competence, a child's ability to successfully interact with other children and adults in a way that demonstrates an

awareness of and ability to manage emotions in an age- and contextually-appropriate manner, is considered a central domain of child development and was the main outcome of interest of the program and the study. Social competence plays a critical role in later academic achievement, mental health and overall well-being (Shonkoff & Phillips, 2000). The second goal was to enhance children's ability to effectively cope with school and home-based life stress.

The program is implemented by staff and a team of volunteer equine facilitators. They include PATH Intl. Certified Instructors; undergraduate students in child-development, education and animal science; professional counseling psychologists; and graduate-level counseling students. For the study, the PATH to Success program staff received extensive training through printed lessons, a handbook,



Participants in the study complete surveys for the project.

hands-on program training with horses and child actors, videos and slide presentations. They were also trained in the program's theoretical rationale and principles of cognitive behavioral counseling and child development. Since the study was conducted as an after-school activity, it was also implemented in close collaboration with school administrators and staff.

The program's weekly activities are based on principles of equitation science and natural horsemanship. They feature a combination of mounted and un-mounted activities and horse-human interactions. These include observing equine behavior, equine management (e.g., grooming), in-hand horsemanship, riding and personal and group reflection activities. An important rationale underlying these activities is that by interacting with equines in the context of these horsemanship activities, children learn to recognize and give non-verbal communication cues to their equine partners through pressure, release,

tors, children attempt to manage and direct their own behavior to evoke desirable responses from the horse (e.g., licking lips, blinking, resting foot), rather than less desirable responses (e.g., swishing tail, pinning ears, tuning out). Using human-equine interactions as an analogy, program facilitators also encourage children (1) to reflect on their behavior, thoughts, feelings and communication skills and (2) apply these to communication and collaboration with a human partner. Practicing positive social behaviors, reflecting on thoughts and feelings and feedback—from the equine and facilitator—may thus improve self- and social awareness, personal responsibility, goal-directed behavior and communication skills.

Procedures and Methods

Participants were recruited through referral by school counselors, flyers, advertisements and school information

posture and other actions. These cues can then provide frequent opportunities for the children to reflect on the meaning of their own behavior and intent. Since equines provide immediate, meaningful feedback, children simultaneously gain experience in observing and interpreting non-verbal cues. With help from the program facilitators,

referred children were either receiving school counseling services for academic and/or behavioral adjustment issues, or their parents had consulted with counselors about the presence of stress in the home. In order to participate, parents and children had to be able to communicate effectively in English, and the child must not have had a serious physical or mental disability. To screen participants, parents completed a 72-item standardized measure of child social competence inquiring how often various behaviors occurred over the past four weeks. The components measured included:

- optimistic thinking
- self-management
- goal-directed behavior
- self- and social awareness
- personal responsibility
- decision-making
- relationship skill

Based on these scores, children in each grade were rank-ordered to select children with relatively lower social competence scores. A total of 113 children were selected from 10 different schools (41 boys and 72 girls with a mean age of 11.35 years). Then, 53 children were randomly assigned to an experimental group to begin participation with the same facilitation team for the entire session. The other 60 children were assigned to a wait-listed control group, and 49 children eventually participated in the following session 16 weeks later. Parents of both groups rated their children's social competence again at the end of the 11-week program.

Study Results

The first hypothesis stated that the experimental group would have higher levels of social competence at post-test compared to the control group. Results supported this hypothesis by demonstrating a significantly higher social competence level for the

experimental group. Results were similar for the wait-listed control group after they completed the 11-week session. This suggested that program participation was responsible for increased social competence.

Specifically, children who participated in the program displayed significantly greater self-awareness and self-management. This is particularly intriguing as it relates directly to the program's proposed theory and the study rationale that suggests why equine-facilitated approaches may be successful. Because interacting with equines offers immediate, meaningful feedback to children in recognizing the effects of their non-verbal behavior, they can, with help from facilitators, (1) practice managing and directing their behavior to evoke desirable responses from the equine and (2) become aware of how to elicit positive responses in human communication.

A second hypothesis stated that program participation would be associated with significantly more positive behavior and less negative behavior during program sessions and that the number of sessions attended would influence the extent to which

participants' behavior improved. To examine this, behavioral reports were completed during each session by the same two program facilitators who worked with the child each week and by one independent observer. This resulted in an average of 26 behavioral reports per child. Each week, raters indicated the extent to which children engaged in 25 positive behaviors (e.g., following direction, accepting feedback, sharing, making eye contact, being appropriately assertive) and 18 negative behaviors (e.g., argumentative, fidgeting, withdrawn, hyperactive, resistant). They assessed these behaviors on a six-point Likert scale ranging from 0 (none), 1 (very low), 2 (low), 3 (medium), 4 (high) to 5 (very high).

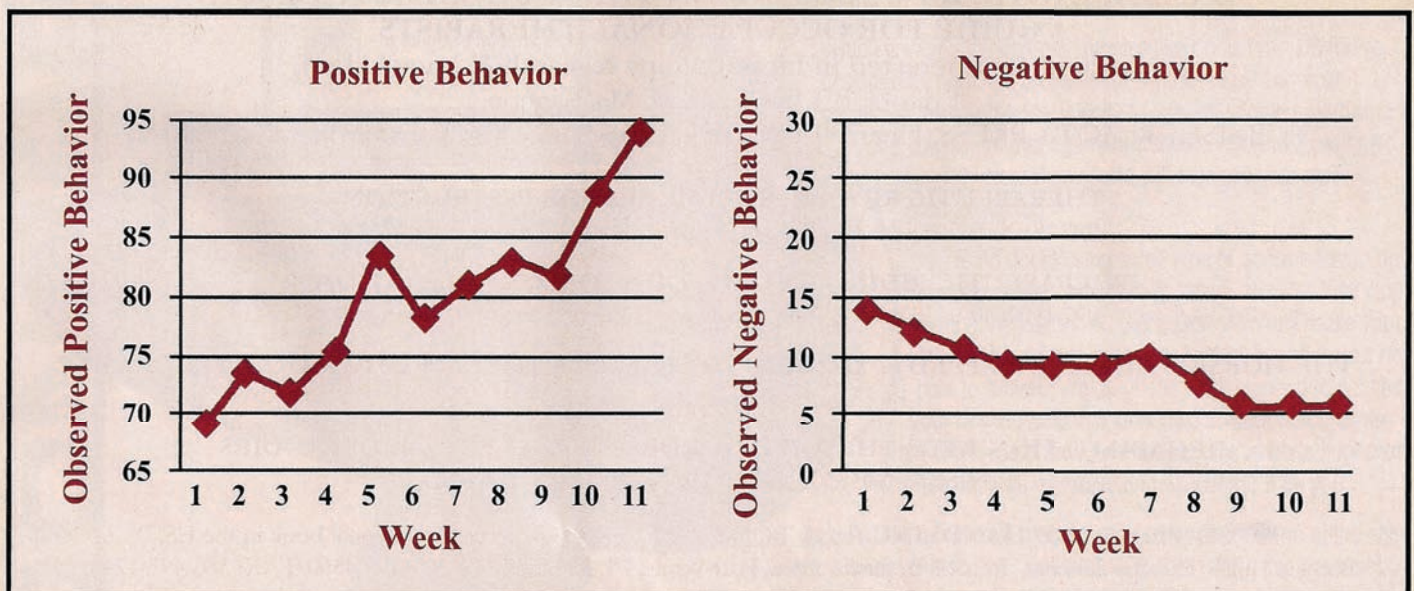
The results demonstrated that children gradually increased the number and strength of positive behaviors and decreased negative behaviors over the 11-week session. These changes were similar for boys and girls, referred children compared to those non-referred, as well as for children with higher versus lower levels of social competence. Because these changes were most strongly associated with attendance, this suggested that the

more frequently children attended, the more they benefitted.

Results also suggested that greater positive behavioral change was associated with lower baseline levels of positive behavior, while greater levels of decreased negative behaviors were associated with higher baseline levels of negative behavior. This means that children with greater behavioral challenges at the start of the session appeared to benefit slightly more from program participation than those children with fewer challenges and higher baseline levels of positive adaptive behavior. It suggests that the PATH to Success program may be especially suitable for children considered at high-risk for adjustment problems.

Implications

These outcomes are exciting for the following reasons. First, the fact that an after-school EFL program participation effectively enhanced children's social competence and behavior means it may have produced multiple benefits that pertain to youths' personal, social and academic lives. Research indicates that promotion of



These charts show how positive behaviors increased and negative ones decreased in a study examining the efficacy of EFL to enhance the social competence and behavior of fifth- to eighth-grade children.

personal and social skills in after-school settings are also known to improve:

- youths' feelings of self-confidence and self-esteem,
- school bonding (positive feelings and attitudes toward school),
- positive social behaviors, and
- school grades and achievement test scores (Durlak & Weissberg, 2007).

Secondly, these results may not only increase the public's confidence in the ability of EAAT programs to positively affect child development but may also translate into heightened support to increase children's accessibility to such programs. As a result, schools may begin to offer EFL as a viable alternative to current athletic or academic achievement after-school programs because it can provide opportunities to children with different interests and needs. Rural settings, such as the one in which this study was conducted, may be better able to provide the resources (e.g., horses,

riding facilities, school transportation, existing 4-H programming activities, volunteers) to support implementation of school-collaborative EAAT programs.

In addition to examining the causal effects of EFL on social competence and behavior, this study also examined whether the PATH to Success program was effective at reducing child stress, including physiological signs of stress. To do this, pre- and post-test patterns of children's cortisol production were compared. (Cortisol is a stress hormone associated with various aspects of children's daily functioning, as well as long-term physical and mental health outcomes.) Several salivary cortisol samples were collected from children in both groups over a two-day period at pretest and post-test in their own homes and on site throughout the 11-week program. Although preliminary, results appear to point to a moderate lowering effect on average and afternoon cortisol levels in response to program

participation. This is considered a protective influence against the development of psychopathology and health problems in certain populations (Lupien, McEwen, Gunnar, & Heim, 2009).

Given its causal design with its use of randomized controls, this study provides the field with scientific evidence that can be used to generate support for expanding innovative, evidence-based approaches through EAAT. By bolstering the field's scientific standing, it can help to further validate EAAT's effectiveness in the eyes of participants and their families, medical providers, donors and the general public.

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